

|                                                                                                                           |     |
|---------------------------------------------------------------------------------------------------------------------------|-----|
| Pressforming of Annular Parts                                                                                             | 755 |
| Allowances for machining and forging tolerances                                                                           | 20  |
| Determination of the initial diameter of bar stock, the number of passes, and the capacity of horizontal forging machines | 20  |
| Method of designing die parts for pressforging in closed dies                                                             | 26  |
| Method of designing heading tools (replaceable die parts and punches)                                                     | 38  |
| Making heading tools                                                                                                      | 44  |
| Methods for determining norms of metal requirements in pressforging blanks of horizontal forging machines                 | 44  |
| Heating bar stock prior to pressforming on horizontal forging machines                                                    | 51  |
| Mecharization and automation of operations in bearing plant forging shops                                                 | 53  |
| Forging annular blanks on flat dies                                                                                       | 60  |
| Cold-sheering of blanks for smith forging or press forging                                                                | 64  |
| Ch. III. Rolling Annular Bearing Parts                                                                                    |     |
| Fundamentals of the process and rolling methods used                                                                      | 66  |
| Machines for rolling annular blanks                                                                                       | 70  |

Card 3/6

|                                                                                                                                                       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Pressforming of Annular Parts                                                                                                                         | 755 |
| Die design and mechanization of sizing operations                                                                                                     | 95  |
| Determination of forces involved in semihot sizing                                                                                                    | 97  |
| Methods of manufacturing rings for tapered roller bearings by forging and buff-welding                                                                | 105 |
| Ch. V. Cold Forging of Rings for Tapered Roller Bearings From 18 HGT Strip Steel                                                                      |     |
| Technological process                                                                                                                                 | 116 |
| Manufacture of preformed blanks by twisting out                                                                                                       | 121 |
| Designing blanks                                                                                                                                      | 124 |
| Twisting out blanks in a die having semiautomatic feed                                                                                                | 125 |
| Manufacture of annular blanks by backward extrusion                                                                                                   | 127 |
| Die design for backward extrusion                                                                                                                     | 128 |
| Methods for calculating sizes of dies and multiple bull-rings                                                                                         | 131 |
| Lubrication of blanks                                                                                                                                 | 137 |
| Ways and means of improving the coefficient of utilization of metals in manufacturing annular blanks by cold pressing from sheet metal in closed dies | 138 |

Card 5/6

|                                                                                                                                |     |
|--------------------------------------------------------------------------------------------------------------------------------|-----|
| Pressforming of Annular Parts                                                                                                  | 755 |
| Simplified theoretical analysis of stresses at the end<br>of deformation in forward and backward extrusion of<br>annular parts | 141 |
| Ch. VI. Manufacture of Cages and Rolling-contact<br>Bearings                                                                   |     |
| Process of manufacturing pressed cage parts for<br>ball bearings                                                               | 151 |
| Process of manufacturing cages for tapered roller<br>bearings from sheet metal                                                 | 158 |
| Making cages for tapered roller bearings from<br>pressed and welded blanks and from electric welded<br>pipes                   | 164 |
| Making pressed cages for ball bearings from welded<br>pipes                                                                    | 178 |
| Bibliography                                                                                                                   | 180 |
| AVAILABLE: Library of Congress                                                                                                 |     |

Card 6/6

G0/wde  
11-4-58

<sup>R</sup>  
TOZHDESTVENSKIY, Yu L.; KURILENKO, N.P.

Bearings (Machinery)

Introduction of methods of cold forging in the manufacture of bearing rings.  
Podshipnik, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

SOV/122-59-2-16/34

AUTHORS: Bugrova, A.A., Candidate of Technical Sciences and  
Rozhdestvenskiy, Yu.L., Candidate of Technical Sciences

TITLE: Drawing and Wall Thinning Seam Welded Cylindrical Blanks  
(Vytyazhka s utoneniyem iz trubosvarnykh zagotovok)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 2, pp 47-50 (USSR)

ABSTRACT: The general scheme for production of accurate thin-walled cylindrical components, such as tracks for needle roller bearings, with high surface finish is depicted in Fig 5. Electrically welded tube is cut to length to provide the blanks. The blank outside diameter is reduced in an external sizing and drawing operation. This is followed by internal sizing (and removal of the weld bead) with further drawing. The end of the blank is then upset in two stages to form a cup. The cup may then be drawn and its wall thinned in tools of the type depicted in Fig 1. Dimensions of the cup before and after drawing and wall thinning are given in Fig 1. The tool must incorporate a bolster (and ejection pin) to hold the upset forming the bottom of the cup during the draw. The necessary clamping forces (and dimensions

Card 1/2

SOV/122-59-2-16/34

Drawing and Wall Thinning Seam Welded Cylindrical Blanks

for the upset) are obtained from formula given; the notation of the formula being indicated in Fig 2 and 3. The "coefficient of use" of the metal in the finished part to the metal in the tubular blank is about 0.7 as compared with a coefficient of about 0.4 when the same part is drawn from a flat blank. The cost of the tubular blank is similar to that of the flat blank where high grade steel strip is used for the latter, as is necessary when a high grade (class 9) surface is required for roller bearing tracks, etc. For lower class surfaces, the electrically seam welded tubular blank may cost up to 30% more than the corresponding flat blank, weight for weight; the much greater coefficient of use of metal with the tubular blank, however, makes use of the latter more economical than the flat blank. The labour cost involved in the operations of converting the tubular blank is slightly less than working with a flat blank. There are 5 figures.

Card 2/2

ALTYKIS, A.V.; BEREZHKOVSIIY, D.I.; VOLKOVITSIIY, V.F.; GIRSH, I.I. [deceased];  
GOL'MAN, L.D.; GRANOVSKIY, S.P.; DOBRINSKIY, N.S.; ZIMIN, A.I.; ZLOT-  
NIKOV, S.L.; KAGALOVSKIY, A.I.; LOBACHEV, P.V.; MARTYNOV, V.N.; MOSE-  
NIN, Ye.N.; NAVROTSKIY, G.A.; OKHRIMENKO, Ya.M.; ROVINSKIY, G.N.;  
STOSHA, Ye.A.; ROZHDESTVENSKIY, Yu.L.; TIKHOMIROV, N.V.; UNKSOV, Ye.P.;  
doktor tekhn. nauk, prof.; SHCHEGLOV, V.F.; SHOFMAN, L.A.; SIROTIN, A.I.,  
red. izd-va; MODEL', B.I., tekhn. red.

[Present state of the forging industry] Sovremennoe sostoianie kuznechno-  
shtampovogo proizvodstva. By Kollektiv sovetskikh i chekhoslovat-  
skikh avtorov. Moskva, Mashgis; Prague, SNTL, 1961. 434 p.

(MIRA 14:8)

(Forging)

SOV/123-60-1-1151

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1960, No 1,  
p 149 (USSR)

AUTHORS: Bugrova, A.A., Rozhdestvenskiy, Yu.L.

TITLE: Investigating the Process of Inverse Extrusion Applicable for  
the Manufacture of Antifriction Bearing Races

PERIODICAL: Tekhnol. Podshipnikostroyeniya, 1958, No 17, pp 27 - 33

ABSTRACT: The authors give an account of the main results of experimental investigations of the inverse extrusion process applicable for the manufacture of bearing races. The stress conditions of deformation were investigated depending on the mechanical characteristics of the metals, friction conditions, geometric tool parameters, and degree of deformation of the blank. Simultaneously the authors investigate the nature of metal flow and the distribution of deformations, depending on the enumerated factors. The extrusion process was carried out in a die on a

Card 1/2

✓ B



SOV/123-60-1-1151

Investigating the Process of Inverse Extrusion Applicable for the Manufacture of Antifriction Bearing Races

200-t capacity crank press, the stress was recorded by the MP0-2<sup>18</sup> oscillograph with the aid of a spherical dynamometer. The analyzed materials were: lead, the steel grades 10<sup>18</sup> and 18KhGT<sup>14</sup>, and D-1.T-4 grade Duralumin<sup>18</sup>.

Ye.A.I.

✓B

Card 2/2

5(5) PHASE I BOOK EXAMINATION 507/2172

Atadamiya munit SSSR. Nakhondredostvinnaya pottoymunaya kumisiya po zhelezam  
Zhelezodorozhnyye metsoyubsheniya Altay-Sayunskiy gornoy oblasti, tom 1, knizka 11  
Geologii (Iren Ore Deposits of the Altay-Sayun Mountain Region, Vol. 1,  
Book 11 Geology) Moscow, 1958. 350 p. (Series: Zhelezodorozhnyye  
metsoyubsheniya SSSR) Kratka list inserted. 2,500 copies printed.

Additional Sponsoring Agencies: Akademiya nauk SSSR, Sibirskoye otdeleniye, DNER.  
Geologicheskaya kumisiya, Glavnyy upravleniye nauchno-issledovatel-  
skikh i obratnykh razrabotok, Sibirskiy nauchno-issledovatel'skiy  
geologicheskii institut, Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii tsentr,  
USSR, Inzhenernyy nauch. USSR, Zhelezodorozhnyy geologicheskoy upravleniye,  
USSR, Inzhenernyy geologicheskoy upravleniye, Sibirskiy geotekhnicheskoy tsentr,  
Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.

eds. of the vol.: P. Ye. Sladysnyk, and O.A. Sokolov; Resp. ZK of Series: I.P.  
 Martin, Academician; Scientific Eds.: I.P. Martin, Academician, Z.P. Goryachev,  
 A.I. Bodin, M.A. Yencovskiy, A.S. Kalugin, N.M. Nekrasov, O.L. Popovskiy, M.L.  
 Shubalov, P. Ye. Sladysnyk, S.B. Shchirovskiy (deceased) O.A. Sokolov,  
 S.B. Strumlin, Academician; V.P. Kishukov, M.A. Ginzburg, and I.S. Shapoval  
 Eds. of Publishing House: I.O. Kudacheva; Tech. Ed.: I.P. Rus'kin.

REMARKS: This book is intended for structural, exploration and mining geologists, for geophysicists and mine-geologists, and industrial planners.

coverage. This work reports to be the first attempt to review and summarize all the material that has been published in the Soviet literature on the topic of the iron-ore basins of the USSR. The book reports the most important results of the investigations of the iron-ore basins of the USSR, and also the work of the Soviet geologists, becoming one of the most important iron-ore bases in the Soviet Union. The book discusses the economic aspects of the geography and geology of the individual deposits, presents a qualitative and quantitative (as of January 1, 1977) analysis of ore reserves, and evaluates the prospects and possibilities of further development of the Atyu-Squagunay iron-ore base. The genetic classification of iron-ore mineralization of the area are described. Extensive information on the geologic description of ore mineralization in the Atyu-Squagunay region is given. There is a historical account of the exploration and development of the region, and of the development of concepts on the genesis and mineralization in the area. The following scientists participated in the preparation and writing of this volume: G.I. Popovskiy, S.S. Lashin, N.N. Tolstova.

[illegible]

6/5/9

ROZHDESTVENSKIY, YU. V.

POSPELOV, G.L., starshiy nauchnyy sotrudnik; LAPIN, S.S.; BELOUS, N.Kh.;  
 KLYAROVSKIY, V.M.; KINE, O.G.; VAKHRUSHEV, V.A.; SHAPIRO, I.S.,  
 starshiy nauchnyy sotrudnik; KALUGIN, A.S.; MUKHIN, A.S.; GARNETS,  
 N.A.; SPETT, Yu.A.; SELIVESTROVA, M.I.; RUTKEVICH, V.G.; BYKOV, G.P.;  
 NIKONOV, N.I.; SAKOVICH, K.G.; MEDVEDKOV, V.I.; ALADYSHKIN, A.S.;  
 PAN, F.Ya.; HUSANOV, M.G.; YAZBUTIS, E.A.; ROZHDESTVENSKIY, Yu.V.;  
 SAVITSKIY, G.Ye.; PRODANCHUK, A.D.; LYSENKO, P.A.; LEBEDEV, T.I.;  
 KAMENSKAYA, T.Ya.; MASLENNIKOV, A.I.; PIPAR, R.; DODIN, A.L.;  
 MITROPOL'SKIY, A.S.; LUKIN, V.A.; ZIMIN, S.S.; KOREL', V.G.;  
 DERBIKOV, I.V.; BARDIN, I.P., akademik, nauchnyy red.; GORBACHEV,  
 T.F., nauchnyy red.; YEROFEEV, N.A., nauchnyy red.; NEKRASOV, N.N.,  
 nauchnyy red.; SKOBNIKOV, M.L., nauchnyy red.; SMIRNOV-VERIN, S.S.,  
 nauchnyy red. [deceased]; STRUMILIN, S.G., akademik, nauchnyy red.;  
 KHLEBNIKOV, V.B., nauchnyy red.; CHINAKAL, N.A., nauchnyy red.;  
 SLEDZYUK, P.Ye., red.toma; SOKOLOV, G.A., red.toma; BOLDYREV, G.P.,  
 red.; VOGMAN, D.A., red.; KASATKIN, P.F., red.; KUDASHEVA, I.G.,  
 red.izd-va; KUZ'MIN, I.F., tekhn.red.

[Iron-ore deposits of the Altai-Sayan region] Zhelezorudnye mesto-  
 rozhdeniya Altae-Saianskoi gornoj oblasti. Vol.1. Book 1. [Geology]  
 (Continued on next card)

POSPELOV, G.I.---(Continued) Card 2.

Geologiya. Otvetstvennyi red. I.P. Bardin. Moskva. 1958. 330 p.  
(MIRA 12:2)

1. Akademiya nauk SSSR. Mezhdudomstvennaya postoyannaya komissiya po zhelezu. 2. Postoyannaya mezhdudomstvennaya komissiya po zhelezu Akademii nauk SSSR (for Pospelov, Shapiro, Sokolov). 3. Zapadno-Sibirskiy filial Akademii nauk SSSR (for Vakhrushev, Pospelov.) 4. Zapadno-Sibirskoye geologicheskoye upravleniye (for Sakovich). 5. Krasnoyarskoye geologicheskoye upravleniye (for Pan). 6. Zapadno-Sibirskiy geologo-razvedochnyy trest Chernyazvedka (for Prodanchuk). 7. Sibirskiy geofizicheskiy trest (for Pipar). 8. Vsesoyuznyy geologicheskoy nauchno-issledovatel'skiy institut (for Dodin). 9. Gornaya ekspeditsiya (for Mitropol'skiy). 10. Gornoye upravleniye Kuznetskogo metallurg.kombinata (for Lukin). 11. Tomskiy politekhnicheskoy institut (for Zimin). 12. Sibirskiy metallurg.institut (for Korel'). 13. Trest Sibneftegeofizika (for Derbikov). (Altai Mountains--Iron ores) (Sayan Mountains--Iron ores)

ROZHDESTVIN, N. P.

Aerial photography in colour. 4 p. (Gt. Britain. Ministry of Aircraft Production. RTP Tr. 1283)

Trans. from the Russian original publ. in Vestnik vozdushnogo flota, 1941, v.23, no.4, p.333-335.

NNIAS

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

MAKAROV, I.U.G., and N. P. ROZHDESTVIN.

Aerofotorazvedyvatel'skaia sluzhba. Moskva, 1947.

Title tr.: Aerial photography in reconnaissance.

NCF

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

ROZHD-STVIN, M. P.

Aerofotografiia. Uchebnik dlia fotospetsialistov VVS Vooruzhennykh Sil Soiuza SSR. Izd. 2., perer.idop. Moskva, Voenizdat, 1947. 331 p., illus.

Title tr.: Aerial photography. Textbook for photospecialists of the Soviet Air Force.

TR810.R67 1947

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

MAKAROV, Yu.G., polkovnik; ROZHDESTVIN, N.P., inzhener-podpolkovnik;  
TSESARSKIY, I.Ya., podpolkovnik, redaktor; CHERNOV, A.N.,  
inzhener-kapitan, redaktor; SHEVCHENKO, G.N., tekhnicheskii  
redaktor.

[Aerial photoreconnaissance service] Aerofotorazvedyvatel'naya  
sluzhba. Pod red. I. Ia. Tsesarskogo. Moskva, Voen.izd-vo  
Ministerstva voennoy aviacii SSSR, 1947, 414 p. (MLRA 9:1)  
(Aeronautics, Military observations) (Photography, Aerial)



ROZHDESTVIN, N. P.

Author: Rozhdestvin, N. P.

Title: Aerial photography. (Aerofotografiia.) 331 p.

City: Moscow

Publisher:

~~Publications~~ Military Printing House

Date: 1949

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 3, No1 2, Page 101

ROZHDESTVIN, S.

Educational work in a trade-union group. Sov. profsoiuzy 17  
no.24:19-22 D '61. (MIRA 14:12)

1. Predsedatel' kul'turno-massovoy komissii zavodskogo komiteta  
3-go Saratovskogo gosudarstvennogo podshipnikovogo zavoda, g.  
Saratov.

(Saratov—Rearing industry)  
(Saratov—Trade unions)

ROZHDOV, N.I.

On sugar packing. Sakh.prom. 28 no.2:36 '54.

(MLRA 7:4)

1. Chernovitskiy sakharney kombinat.

(Sugar industry)

ROZHDOR, V.A.; SAVVUSHKIN, Ye.S., kand.tekhn.nauk; CHUYKO, P.A.

Lateral stability of semitrailers. Avt.prom. 29 no.1:9-11  
Ja '63. (MIRA 16:1)  
(Truck trailers)

ROZHDOVA, B.Ya., inzh.; KOPYSKIY, Kh.L., inzh.

Designing and building chemical industry enterprises. From.  
stroil. 37 no.6:45-47 Je '59. (MIRA 12:8)  
(Chemical plants) (Precast concrete construction)

YAKIMOV, G.V.; ROZHDOV, I.N.

Fouling of water pipelines under the effect of Don River  
water. Trudy NPI 157:19-27 '64.

(MIRA 19:1)

ROZHDOV, I.N.

Using the sodium silicate treatment for reducing the  
aggressiveness of tap water. Trudy NPI 157:55-62 '64.  
(MIRA 19:1)

KOZHE, A.

USSR/Human and Animal Physiology - Nervous System.

V-12

Abs Jour : Ref Zhur - Biol., No 1 , 1958, 4460

Author : A. Gasto, A. Rozhe, S. Donzh'ye, A. Rezhi

Inst : -

Title : Study of Electroencephalographic Equivalents in the Processes of Central Excitation and Central Inhibition during the Development of Conditioned Reflexes.

Orig Pub : Zhurnal vyssh. nerv. deyatel'nosti, 1957, 7, No 2, 185-202

Abstract : No abstract.

Card 1/1



ROZHE, A. [Roger, A.]; VORONIN, L.G.; SOKOLOV, Ye.N.

Electroencephalographic study of a temporary connection during the extinction of the orientation reflex in man [with summary in English]. Zhur.vys.nerv.deiat. 8 no.1:3-16 Ja-F '58. (MIRA 11:3)

1. Kafedra vysshey nervnoy deyatel'nosti Moskovskogo gosudarstvennogo universiteta i Institut natsional'noy gigiyeny, Marsel', Frantsiya.

(ELECTROENCEPHALOGRAPHY,

in temporary connections during extinction of orientation reflex (Rus)

(REFLEX,

orientation, EEG of temporary connections during extinction (Rus)

MERKLIN, R.L.; ROZHE, Zh.

Some new data on Tertiary pectinids of the Ukraine. Mat.k "Osn.  
paleont." no.3:58-60 '59. (MIRA 15:7)  
(Krasnokamenka region (Ukraine)--Pectinidae, Fossil)

USSR/General Problems of Pathology - Tumors. Comparative  
Oncology. Tumors of Man

U

Abs Jour : Ref Zhur Biol., No 5, 1959, 22889

Author : Rozhek, I.S.

Inst :

Title : Tubal Pregnancy in Carcinoma of Cervix Uteri.

Orig Pub : Akusherstvo i ginekologiya, 1958, No 4, 94-95

Abstract : A rare case of combination of extrauterine pregnancy and carcinoma is described. In a 32-year-old patient who came to the hospital due to delay of menstruation, a squamous-cell non-cornifying carcinoma of the cervix uteri was discovered. Only in laparotomy was the tubal pregnancy discovered. The patient was subjected to extensive extirpation of uterus and adnexa according to Vertheim-Nikol'skiy; 18 days after surgery, the patient was discharged in a satisfactory condition.

Card 1/1

ROZHEK, I.S. (Tambov, Pervomayskaya pl., d.38-a, kv.9)

Use of L-103 hydrolysin for cancer patients. Vop.onk. 5 no.5:582-  
586 '59. (MIRA 12:12)

1. Iz Tambovskogo oblastnogo onkologicheskogo dispansera (glavnyy  
vrach - Yu.A. Mostovskiy) i Tambovskoy oblastnoy stantsii perelivaniya  
krovi (glavnyy vrach - N.A. Rossinskaya).

(NEOPLASMS, ther.

hydrolysin L-103 (Rus))

(AMINO ACID MIXTURES, ther.use  
same)

ROZHEK, I.S. (Tambov, Pervomayskaya pl., d. 38-a, kv. 9)

Fibroma and primary multiple cancer of the stomach. Vop. onk.  
5 no.1:111-113 '59. (MIRA 12:3)

1. Iz Tambovskogo oblastnogo onkologicheskogo dispansera (glavnyy  
vrach - zasluzhennyy vrach RSFSR T.M. Grozdov, z av. khirurgicheskim  
otdelom - I.S. Rozhek).

(STOMACH--CANCER, case reports,

2 adenocarcinomas & fibroma (Rus))

(FIBROMA, case reports,

stomach, with 2 adenocarcinomas (Rus))

ROZHEK, I.S.

Tubal pregnancy in cervical cancer. Akush. i gin. 34 no.4:94-95  
Jl-Ag '58 (MIRA 11:9)

1. Iz Tamboskogo oblastnogo onkologicheskogo dispansera (glavnyy  
vrach - zaslyzhennyy vrach RSFSR T.M. Grozdov).

(PREGNANCY, ECTOPIC, compl.

tubal, in cancer of cervix (Rus))

(CERVIX NEOPLASMS, in pregn.

tubal pregn. (Rus))

ROZHEK, I.S.

Two observations of lymphangioma of the peritoneum. Vop. onk. 6  
no. 8:85-87 Ag '60. (MIRA 14:1)  
(PARITONEUM—TUMORS)

Brit Abst. BI

June 1953

Solid + Gaseous  
Fuels

(3)

Coking of coal of specially low ash content. A. Grossman, B. Kalinowski, and S. Rojek (*Przem. Chem.*, 1952, 8, 543—544).— Specially refined coal, containing 0.6—0.8% of ash, gives coke containing 0.9—1.3% of ash, which is too high for making electrodes. Addition to the coal of 30% of pitch of softening point 70° gives a coke of acceptable mechanical and chemical properties.

R. T. T. T. T.



ACCESSION NR: AT4042315

S/0000/63/003/000/0371/0376

AUTHOR: Kremnev, O.A., Rozhen, A.P., Chavdarov, A.S.

TITLE: The effect of the circulation of ferromagnetic particles, caused by a rotating magnetic field, on convective heat transfer

SOURCE: Soveshchaniye po teoreticheskoy i prikladnoy magnitnoy gidrodinamike. 3d, Riga, 1962. Voprosy\* magnitnoy gidrodinamiki (Problems in magnetic hydrodynamics); doklady\* soveshchaniya, v. 3. Riga, Izd-vo AN LatSSR, 1963, 371-376

TOPIC TAGS: hydromagnetics, heat transfer, convection, convective heat transfer, rotating magnetic field, turbulation, boundary layer, stator

ABSTRACT: The authors propose a method for the artificial turbulation of the laminar boundary layer on the inner surface of tubes by means of the circulation of ferromagnetic particles. Small particles of ferromagnetic material are injected into the tube, and the latter, either alone or together with other tubes, is placed in the stator of a three-phase asynchronous motor. When the windings of the stator are connected to the power source, a rotating magnetic field is generated in the immobile circular core of the stator, and at the same time, by means of their currents, the stator windings magnetize the ferromagnetic particles. In each of these ferromagnetic particles, at the moment the rotating magnetic

1/3

Card

ACCESSION NR: AT4042315

field is cut in, induced magnetic poles occur. As the currents which feed the working windings of the stator change, the axis of the stator poles begins to turn in space, while, on the other hand, because of the pronounced hysteresis of the magnetosolid material, the poles of the ferromagnetic particles during the initial stage of the process remain motionless in space; that is, the axis of the particle poles is shifted with respect to the axis of the stator poles and lags by a certain spatial angle. Thus, forces arise which tend to place the particles in rotation. Meanwhile, as a result of inertia on the part of the particles and friction against the surface of the tube, their velocity cannot compare with the velocity with which the stator field rotates, an asynchronous rotational regime sets in, during which the ferromagnetic particles are subjected to a cyclic remagnetization at a frequency proportional to the slippage. Under the influence of the centrifugal forces which come into being with the rotation of the particles, the latter are pressed against the wall of the tube. This gives rise to an artificial agitation of the boundary layer, thus leading to a reduction in thermal resistance from the inner side of the tube; that is, to an increase in the heat transfer factor. The experimental technique and associated instrumentation employed in the testing of this method is described in some detail in the article. The results of these tests confirmed the high degree of efficiency of this method of heat-transfer

2/3

Card

ACCESSION NR: AT4042315

intensification. The results are processed and presented in the article in the form of graphs with the ratio between the heat-transfer factor during circulation of the ferromagnetic particles and the same factor with no ferromagnetic particles present serving as the criterion for the determination of the intensification achieved in the heat-transfer process. Intensification was studied at velocities of 0.4 - 2.5 m/sec. An analysis was made of the heat-transfer factor during ferromagnetic particle circulation as a function of the magnitude of the current passing through the stator windings. This function was found to be complex in character, and an attempt to interpret it is made in the article. Heat-transfer intensification was also found to depend on the material of the ferromagnetic particles, the number of polar pairs of the electromagnet generating the rotating magnetic field, the frequency of the current, and certain other parameters. Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 04Dec63

ENCL: 00

SUB CODE: TD, ME

NO REF SOV: 000

OTHER: 000

3/3  
Card

KREMNEV, O.A.; BOROVSKIY, V.R.; CHAVDAROV, A.S.; ROZHEN, A.P.;  
SHIMKO, I.G.

Oxidation of alkali cellulose by ozonized air. Khim. volok.  
no.4:34-37 '63. (MIRA 16:8)

1. Institut teploenergetiki AN UkrSSR (for Kremnev, Borovskiy,  
Cavdarov, Rozhen). 2. Kiyevskiy kombinat iskusstvennogo  
volokna (for Shimko).

ROZHEN, O., inzh.

His name was Losev. Znan. ta pratsia no.5:22-23 My '62.

(MIRA 15:6)

(Radio--Receivers and reception)  
(Losev, Oleg Vladimirovich, 1903-1942)

ROZHEN, O. I. nauchnyy sotrudnik

Microbes as power engineers. Nauka i zhyttia 11 no.12:20-21  
D '61. (MIRA 15:2)

1. Institut teploenergetiki AN USSR.  
(Microbiological research)

ROZHEN, O., inzh.

Thousand hands of the corona discharge. Znan. ta pratsia no.3:  
6-8 Mr '62. (MIRA 16:7)

(Corona (Electricity))

ROZHEN, O., inzh.

Duel with nature. Znan. ta pratsia no.1:8-10 Ja '63. (MIRA 16:3)  
(Cybernetics)



STEL'MAKH, S.; ROZHEN, O.

Atomic garden. Znan.ta pratsia no.9:15-16 S '62. (MIRA 15:11)  
(Plants, Effect of radioactivity on)

NOZHEN, O., inzh.

Electronics in the kingdom of space cold. Znan. ta pratsia  
no.12:2 D '61. (MIRA 14:11)

(Low temperature research).  
(Superconductivity)

ROZHENKO, O.A.

Test-tube reaction for promedol. Apt.delo 14 no.2:74 Mr-Ap '65.  
(MIRA 19:1)

1. Kiyevskiy tekhnologicheskoy institut legkoy promyshlennosti.

*Card*  
ROZHENKO, O. I.: Master Med Sci (diss) -- "The effect of anemia on the contraction capacity of the uterus". Chernovtsy, 1958. 16 pp (Chernovtsy State Med Inst), 200 copies (KL, No 1, 1959, 124)

14(5)

SOV/92-58-10-6/30

AUTHORS: Rozhen, P., Chief Engineer and Savin, K., Chief Mechanic

TITLE: Quelling a Gas Gusher (Ukroshcheniye gazovogo fontana)

PERIODICAL: Neftyanik, 1958, Nr 10, pp 9-12 (USSR)

ABSTRACT: The authors describe measures taken at the Berezovo gas field to quell the gas gusher that suddenly blew out from a well (Fig. 1). The well had 119 pipes 1299 m in total length, and a 5" casing. The gusher, which first ejected the drilling mud, consisted of gas and water and continued to spout 27 days without dropping its flow of approximately 750,000 m<sup>3</sup> per day. Due to a temperature of minus 20°C -45°C ice entirely covered the rig. Since its pieces were falling down, it was too dangerous to approach the rig and therefore it was decided to fell the rig from a distance with the aid of 2 tractors and steel cables, as shown in Fig. 2. The operation involved a considerable risk of fire due to possible sparks from metal striking against metal. However, this risk was reduced by the quantity of water ejected with the gas. When various sections of the felled rig were removed the ice cone and the gas gusher looked like an active

Card 1/2

Quelling a Gas Gusher

SOV/92-58-10-6/30

volcano (Fig. 3). While the work of removing the ice was in process, the mechanical workshop of the field assembled the equipment to control the gusher flow. It was a kind of wellhead Christmas tree consisting of numerous pipes, valves, rings, and nozzles (Fig. 4 and 5) which was gradually installed with necessary precaution. During its installation the gusher continued to spout through two opened valves. Sixty cubic meters of drilling mud and twenty five of water were injected into the well with the aid of two cementing trucks placed as shown in the schematic drawing of Fig. 6. The authors indicate the sequence with which various valves were opened and closed during the operation carried out to quell the gusher by introducing mud and water into the well. The diagram of Fig. 7 shows how the well pressure was gradually dropping as a result of the introduction of the drilling mud. Despite a freezing temperature a small crew of the Tyumen' Geological Administration, working far from any populated center, managed to bring under control a gas gusher which endangered operations at the field. There are 7 figures.

ASSOCIATION: Tyumen'skoye geologicheskoye upravleniye (The Tyumen' Geological Administration)

Card 2/2

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,  
p 244 (USSR) 15-57-10-14819

AUTHOR: Rozhen, P. I.

TITLE: Reinforcing Drill Holes in Competent Rocks (K voprosu  
krepleniya skvazhin v ustoychivyykh porodakh)

PERIODICAL: Tr. Irkutsk. gorno-metallurg. in-ta, 1956, Nr 10,  
pp 124-129

ABSTRACT:

In rotary drilling, when the hole extends far past the zone of casing, a column is lowered to strengthen the section causing the danger. The author analyzes the causes of collapse of the casing in holes with resistant walls and makes appropriate recommendations. Special attention is given by the author to drill-hole sections that cut through rock salt. This material is easily dissolved, as a consequence of which caverns are produced, and in such places the column may break down. It is recommended that in the upper part of the uncased sections a slurry be used, having a low specific

Card 1/2

ROZHENKO, G.L. [Rozhenko, H.L.]

*Physalospora malorum* (Arnaud) Shera., the ascus stage of  
*Sphaeropsis malorum* Peck., in the Ukrainian S.S.R. Ukr.  
bot. zhur. 21 no.4:107-108 '64.

(MIRA 17:11)

1. Laboratoriya mikologii Instituta botaniki AN UkrSSR.



CHALIKY, V.P.; ROZENKO, S.P.

Infrared absorption spectra of binary systems of hydroxides  
Mg - In, Zn - In, Cd - In and of their dehydration products.  
Ukr. Khim. zhur. 30 no.10:1027-1032 '64.

X-ray diffraction and thermographic study of the binary  
systems of hydroxides Mg - In, Zn - In, and Cd - In.  
Ibid.:1032-1036

(MIRA 17:11)

1. Institut obshchey i neorganicheskoy Khimii AN UkrSSR.

ROZHENKO, S.P.; CHALYY, V.P.

Water content and apparent volume of precipitates in the  
binary systems of hydroxides of Mn - In, Zn - In, and  
Cd - In. Ukr. khim. zhur. 30 no.9:900-905 '64. (MIRA 17:10)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

CHALYY, V.P.; SHOR, O.I.; ROZHENKO, S.P.

Thermographic study of certain metal hydroxides. Part 1: Individual hydroxides. Ukr. khim. zhur. 27 no.1:3-6 '61. (MIRA 14:2)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Hydroxides)

ROZHENKO, G.I. [Rozhenko, H.I.]

New species of parasitic fungi in the Ukraine. Ukr. bot. zhur.  
16 no. 6: 85-86 '59. (MIRA 13:5)

1. Institut botaniki AN USSR, otdel mikologii.  
(Ukraine--Fungi)

ROZHENKO, O., brigadir malyarov,

We work without alternations. Stroite.' no.2:18 F '57. (MLRA 10:3)

1. Trest No. 26 Ministerstva stroitel'stva USSR, Kiyev.  
(Painting, Industrial)

ROZHENKO, I.A.

The P703 vulcanization jaw-type press. Biul. tekhn.-ekon. inform.  
no.3:17-19 '58. (MIRA 11:6)

(Vulcanization) (Power presses)

PAVLOV, V.L.; ROZHENKO, O.A.

"Unnatural" color of some foodstuffs. Sud.-med. ekspert. 6  
no.1:18-20 Ja-Mr '63. (MIRA 16:2)

1. Kiyevskoye oblastnoye byuro sudebnomeditsinskoy ekspertizy  
(nachal'nik N.N. Strelets).  
(CHEMISTRY, FORENSIC) (FOOD CONTAMINATION)

ROZHENKO, O.A.

Komarovskii's reaction on fusel oils. Sud.-med.ekspert. 4 no.3:  
42-44 JI-S '61. (MIRA 14:10)

1. Ilyevskoye oblastnoye byuro sudebnomeditsinskoy ekspertizy  
(nachal'nik N.N.Strelets).  
(FUSEL OIL)



CHALYY, V.P.; ROZHENKO, S.P.; MAKAROVA, Z.Ya.

Kinetics and mechanism of the aging of metallic hydroxides.  
Part 6: Determination of the water content of bivalent  
metal hydroxides. Ukr.khim.zhur. 28 no.8:915-920 '62.  
(MIRA 15:11)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.  
(Metallic oxides)  
(Water)

CHALYY, V.P.; ROZHENKO, S.P.; MAKAROVA, Z.Ya.

Kinetics and mechanism of the aging of metallic hydroxides.  
Part 7: Determination of the water content of trivalent  
metal hydroxides. Ukr.khim.zhur. 28 no.8:921-923 '62.

(MIRA 15:11)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.  
(Metallic oxides)  
(Water)

AUTHORS: Chalyy, V. P., Rozhenko, S. P. SOV/78-3-11-16/23

TITLE: II. Radiographic Investigation of Binary Metal Hydroxide Systems (II. Rentgenograficheskoye issledovaniye binarnykh sistem gidrookisey metallov)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 11, pp 2523 - 2531 (USSR)

ABSTRACT: The influence of the chemical properties of some metal hydroxides, their different stability to dehydration, the pH-value of the precipitation, and their structure were investigated. The following hydroxide systems were investigated: nickel hydroxide-iron hydroxide, copper hydroxide-iron hydroxide, and zinc hydroxide-iron hydroxide. In the precipitation of the hydroxides diluted solutions with the following ratio of the components were used: Ni:Fe, Cu:Fe, Zn:Fe = 1:2. 0,1 NaOH was used as precipitant, it was dropped in cold into the metal salt solutions. The experiments showed that in the case of an aging of the mixed hydroxides of  $\text{Cu}^{2+} + \text{Fe}^{3+}$  no copper ferrite is formed. In contrast to this zinc ferrite and nickel ferrite are produced easily.  $\text{Fe}^{3+}$  dehydrates

Card 1/3

II. Radiographic Investigation of Binary Metal  
Hydroxide Systems

SOV/78-3-11-16/23

slowly, in binary systems, however, quickly. In the case of an aging of the binary hydroxide systems the velocity of the ferrite formation depends on the following factors:

1) Chemical properties of the hydroxides, 2) Stability to dehydration of the hydroxides, 3) pH-value of the hydroxide precipitation, 4) Structure of the hydroxides. Zinc ferrite of the composition  $ZnFe_2O_4$  is produced from the system of the hydroxides zinc-iron. The X-ray analysis confirms the existence of zinc ferrite.  $NiFe_2O_4$  is

formed in the system nickel hydroxide-iron hydroxide. The X-ray analysis confirms this formation. In the case of the precipitation of the hydroxides of  $Cu^{2+} + Fe^{3+}$

$Cu(OH)_2$  exercises a protective effect in the dehydration of iron hydroxide. Thus, this system is stable to dehydration. In the system of the hydroxides  $Cu^{2+} + Fe^{3+}$  no copper ferrite is formed, not even after 415 hours of aging under water at  $20^\circ C$  and after 10 hours heating at  $90^\circ C$ . The X-ray analyses showed that the hydroxides have amorphous structure. There are 2 figures, 2 tables,

Card 2/3

II. Radiographic Investigation of Binary Metal  
Hydroxide Systems

SOV/78-3-11-16/23

and 27 references, 22 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR  
(Institute of General and Inorganic Chemistry, AS UkrSSR)

SUBMITTED: July 26, 1957

Card 3/3

GORONOVSKIY, I.T.; ROZHENKO, S.P.; ZABARILO, A.B.

Using triangular diagrams in the study of water purification  
processes. Part II. Physicochemical properties of coagulates.  
Ukr. khim. zhur. 27 no.4:529-536 '61. (MIRA#14:7)  
(Water-Purification) (Coagulation)

CHALYY, V.P.; ROZHENKO, S.P.

X-ray analysis of binary metal hydroxide systems. Part 2. Zhur.  
neorg.khim. 3 no.11:2523-2531 N '58. (MIRA 11:12)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Hydroxides) (X rays)

ROZHENKO, S. P. 585

AUTHORS: Chalyy, V.P., and Rozhenko, S.P.

TITLE: Coprecipitation of Nickel with Aluminium Hydroxide in Cadmium-Sulphate Solutions. II. X-Ray Investigation of the Precipitation Products. (Soosazhdenie Nikelya s Gidrookis'yu Alyuminiya v Rastvorakh Sernokislovo Kadmiya. II. Rentgenograficheskoe Issledovanie Produktov Soosazhdeniya).

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry) Vol.11, No.2, pp.456-459 (U.S.S.R.).

ABSTRACT: X-Ray investigations have shown that the coprecipitation of nickel with aluminium hydroxide from cadmium-sulphate solutions occurs on account of the formation of a solid solution of nickel hydroxide  $\text{Ni}(\text{OH})_2$  in  $\gamma\text{-Al}(\text{OH})_3$ . The coprecipitated product is white with a bluish-green tinge. Values obtained for interplanar distances for the coprecipitated product from cadmium sulphate solution and for  $\text{Ni}(\text{OH})_2$  and  $\text{Al}(\text{OH})_3$  precipitated together are tabulated together with values in the literature for artificial  $\gamma\text{-Al}(\text{OH})_3$ .

There are twenty-five references, four of them Russian.

One Table.

The work was carried out at the Institute of General and Inorganic Chemistry of the Academy of Sciences of the Ukrainian SSR.

Received 23 July, 1956.



CHALYY, V.P.; ROZHENKO, S.P.

X-ray study of the system:  $ZnFe_2O_4 - CoFe_2O_4$  and  $ZnFe_2O_4 - CdFe_2O_4$ .  
Dokl. AN SSSR 108 no.5:875-877 Je 1966. (MIRA 9:10)

1. Institut obshchey i neorganicheskoy khimii Akademii nauk USSR.  
Predstavleno akademikom A.N. Frumkinym.  
(Ferrates(III))

ROZHENKO, S. P.

Chem) 1877. X-ray investigation of the systems  $ZnFe_2O_4$ - $CoFe_2O_4$  and  $ZnFe_2O_4$ - $CaFe_2O_4$ .  
Y. P. CHALY and S. P. ROZHENKO (*Doklady Akad. Nauk S.S.S.R.*, 108, 875, 1956.  
from *Chem. Abstr.*, 51, 1682, 1957). In Russian.

5  
4E4j

for any

CHALYY, V.P.; ROZHENKO, S.P.

Coprecipitation of nickel with aluminum hydroxide in cadmium sulfate solutions. Part 2. X-ray analysis of the coprecipitation products.  
Zhur.neorg.khim. 2 no.2:456-459 F '57. (MLRA 10:5)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Nickel hydroxides) (Cadmium sulfate) (Precipitation)  
(Aluminum hydroxide)

CHALYY, V.P.; ROZHENKO, S.P.

X-ray study of the  $\text{ZnO-In}_2\text{O}_3$  system. Dokl. AN SSSR 108 no.6:1106-  
1108 Je '56. (MLRA 9:10)

1. Institut obshchey i neorganicheskoy Khimii Akademii nauk USSR.  
Predstavleno akademikom A.N. Frumkinym.  
(Zinc oxide) (Indium oxides)

ROZHENKO, S. P.

Category: USSR / Physical Chemistry.  
Thermodynamics. Thermochemistry. Equilibrium. Physico-  
chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29938

Author : Chalyy V. P., Rozhenko S. P.

Inst : Academy of Sciences USSR

Title : X-Ray Investigation of the System  $\text{ZnO} - \text{In}_2\text{O}_3$ .

Orig Pub: Dokl. AN SSSR, 1956, 108, No 6, 1106-1108.

Abstract: Roentgenographic investigation showed that  $\text{ZnIn}_2\text{O}_7$  is not formed in the  $\text{ZnO} - \text{In}_2\text{O}_3$  system. The region of solid solutions of  $\text{ZnO}$  in  $\text{In}_2\text{O}_3$  is limited to an 8.90% by weight content of  $\text{ZnO}$  and is not altered by the method of preparation and temperature of calcining of the mixture of oxides. The previously reported data (Ensslin F., Valentin S., Z. Naturforsch., 1947, 26, 5) concerning the boundary of the occurrence of solid solutions, in the  $\text{ZnO} - \text{In}_2\text{O}_3$  system, could not be confirmed.

Card : 1/1

-50-

ROZHENKO, S.P.

Catalytic properties of spongy deposits of copper and zinc.  
~~O. R. Kudra and S. P. Rozhenko. Zapiski Inst. Khim. Akad. Nauk Ukr. SSR, Ser. Khim. 2, 41-4 (Russian and English summaries, 44-5) (1956). A black deposit, containing a mixt. of Cu, ZnO, and  $Cr_2O_3$ , was prepd. with an av. compn.: Cu 81.4, ZnO 11.95,  $Cr_2O_3$  4.65%. The mixt. was used for synthesis of methanol from a gas contg. CO 17.4,  $H_2$  77.0, and N, 5.6% at 100 atm. pressure and at a temp. range 200 to 400°. The product contained 20% methanol. Analysis of exhaust gases indicated absence of  $CH_4$  and  $CO$ . M. O. Holowaty~~

ROZHENKO, S.P.

CHALYY, V.P.; ROZHENKO, S.P.

Kinetics and aging mechanism of hydroxides of metals. Part 1:  
Radiographic investigation of indium hydroxide. Zhur.neorg.khim.  
2 no.9:2007-2013 S '57. (MIRA 10:12)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Indium hydroxides) (X-ray spectroscopy)

ROZHENKO, S.P.

4

X-ray investigation of copper and zinc electrodeposits.  
 O. K. Kudra and S. P. Rozhenko. *Zh. Fiz. Khim.*,  
*Akad. Nauk Ukr. SSR*, **22**, 8 (1948) (Russian and Eng-  
 lish summaries, 38-91) (1948).—The primarily porous electro-  
 deposits of Zn and Cu showed presence of oxides in the  
 metals: in Cu,  $\text{Cu}_2\text{O}$ , and in Zn,  $\text{ZnO}$ . The parameter of the  
 process was influenced by the compn. of the electrolyte and  
 the bath conditions. The enlargement of lattice parameters  
 was inversely proportional to the quantity of oxide present.  
 In Cu deposits from cuprammonia baths the max. increase  
 of Cu parameter was obtained in the complete absence of  
 $\text{Cu}_2\text{O}$ . Highly dispersed deposits of Cu and Zn oxides were  
 obtained in electrolyzing a soln. contg. 5%  $\text{CuSO}_4$  and 5%  
 $\text{ZnSO}_4$  at a c.d. ranging from 0.15 to 0.25 amp./sq. cm.  
 M. O. Holowaty



SOV/86-58-7-14/38

AUTHOR: Rozhentsev, P. V., Lt Col of Tech<sup>n</sup> Service

TITLE: Quality Control Assures Success (Kachestvennyy kontrol'-zalog uspekha)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 7, pp 28-31 (USSR)

ABSTRACT: In this article the author, a senior engineer of a regiment, describes the inspection and maintenance of aircraft in his unit. The constant readiness of aircraft is assured by exercising systematic and very strict control during every stage of maintenance work and by carrying out periodical inspections at the assigned time. The method of assembly-by-assembly inspection is widely used, which the author says is a very effective means of maintenance control. A certain sequence in detection of defects has been established. All defects, even the smallest, are eliminated immediately after the flight. For better maintenance control, two aircraft maintenance logbooks are kept in which the

Card 1/2

Quality Control Assures Success (Cont.)

SOV/86-58-7-14/38

officers in charge of routine maintenance groups and the personnel of the engineering and technical service enter their notes on the condition of the aircraft and its equipment. The author also describes briefly how the work of the personnel in charge of the armament and radio equipment should be organized.

Card 2/2

ROZHENTSEV, P.V., podpolkovnik tekhnicheskoy sluzhby

A thoroughgoing examination is the guarantee of success. Vest.  
Vozd. Fl. 41 no. 7:28-31 J1 '58. (MIRA 11:7)  
(Airplanes--Maintenance and repair)

ROZHENTSEV, V.A., dotsent; KUZNETSOVA, L.A., red.; VOZNESENSKIY, A.D.,  
tekh.n.red.

[Mechanization and electrification of agriculture] Mekhani-  
zatsiia i elektrifikatsiia sel'skokhoziaistvennogo proizvodstva;  
metodicheskie ukazaniia po razdelu "Sel'skokhoziaistvennye  
mashiny i orudiia." Dlia studentov agronomicheskikh spetsial'-  
nostei. Balashikha, Vses.sel'khoz.in-t zaobnogo obrazovaniia,  
1959. 25 p. (MIRA 14:12)

(Electricity in agriculture)  
(Agricultural machinery)

ROZHENTSEV, Vadim Alekseyevich, kand.tekhn.nauk; TURKEL', Liber Gri-  
gor'yevich, inzh.; ROZIN, M.A., red.; GOR'KOVA, Z.D., tekhn.red.

[Repair of agricultural machinery] Remont sel'skokhoziaist-  
vennykh mashin. Izd.2., dop. i perer. Moskva, Gos.izd-vo  
sel'khoz.lit-ry, 1960. 287 p. (MIRA 13:11)  
(Agricultural machinery--Maintenance and repair)

h2081

S/170/62/005/011/006/008  
B104/B102

26.1430  
AUTHORS:

Nayer, V. A., Rozhentseva, S. A.

TITLE:

Design of semiconductor coolers and heaters for liquid flows

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, v. 5, no.11, 1962, 90 - 94

TEXT: The characteristics of heaters and coolers for liquid flows, consisting of semiconductor thermopiles, are calculated for the thermocouples having different dimensions in order to achieve maximum possible efficiency. The dimensions of the thermocouples are determined from

$$\frac{l}{S} = \alpha(T - T_0) \left\{ \rho l \left[ \left( 1 + \frac{T + T_0}{2} Z \right)^{\frac{1}{2}} - 1 \right] \right\}^{-1}, \quad (1)$$

$$Z = \frac{\alpha^2}{\rho \lambda}.$$

(2).

The thermal equilibrium of the liquid to be cooled and of the cold junctions gives

$$-GcdT_0 = \left[ \alpha T_0 l - \frac{1}{2} l^2 \rho \frac{l}{S} - \lambda \frac{S}{l} (T - T_0) \right] dn. \quad (3),$$

Card 1/4

Design of semiconductor ...

S/170/62/005/011/006/008  
B104/B102

from which there follows  $-\frac{Gc}{\alpha I} \frac{dT_0}{dn} = T_0 - \frac{1}{2} \frac{T - T_0}{M - 1} - \frac{M - 1}{Z}$ ,

$$M = \left(1 + \frac{T + T_0}{2} Z\right)^{1/2} \quad (4)$$

allowing for (1). Here  $M = \left(1 + \frac{T + T_0}{2} Z\right)^{1/2} = \text{const.}$  The solution to (4) is

$$n = \frac{Gc}{B \alpha I} \ln \frac{\psi_0}{\psi} \quad (5)$$

$$B = \frac{2M - 1}{2(M - 1)},$$

$$\psi_0 = T - B(T - T_0) - \frac{1}{Z}(M - 1), \quad (6)$$

$$\psi = T - B(T - T_0) - \frac{1}{Z}(M - 1). \quad (7)$$

whereby the number of thermocouples can be determined as a function of the temperature of the liquid to be cooled. The liquid temperature can be

Card 2/4

Design of semiconductor ...

S/170/62/005/011/006/008  
B104/B102

determined in the same way:

$$T_0 = T_{01} - \frac{\psi_0}{B} \left[ 1 - \exp \left( -\frac{\alpha \ln B}{Gc} \right) \right]$$

(8).

The amount  $W$  of electric energy consumed at the hot junctions is

$$W = \frac{2MGc(T_{01} - T_0)}{2M - 1} \left[ \frac{TZ - M + 1}{Z(\psi_0 - \psi)} \ln \frac{\psi_0}{\psi} - 1 \right] \quad (14)$$

and the heat  $Q$  released at the hot junctions is

$$Q = \frac{Gc(T_{01} - T_0)}{2M - 1} \left[ \frac{2M(TZ - M + 1)}{2(\psi_0 - \psi)} \ln \frac{\psi_0}{\psi} - 1 \right] \quad (15)$$

Formulas are given for the cooling and heating factors are used to calculate the efficiency. With given  $G$ ,  $c$ ,  $T$ ,  $T_{01}$  and  $T_0$  the electric energy consumed and the thermal energy released at the hot junctions depend neither on the amperage nor on the dimensions of the thermocouples. A thermopile designed for heating Card 3/4



Design of semiconductor ...

S/170/62/005/011/006/008  
B104/B102

liquids is studied in a similar way.  $n = \frac{C_0}{B \times I} \ln \frac{\psi}{\psi_1}$ , (23),

$$W = \frac{2MG_0(T-T_1)}{2M-1} \left[ 1 - \frac{T_0 Z - M + 1}{Z(\psi - \psi_1)} \ln \frac{\psi}{\psi_1} \right], \quad (25)$$

$$\varphi_{\max} = \frac{2M-1}{2M} \left[ 1 - \frac{T_0 Z - M + 1}{Z(\psi - \psi_1)} \ln \frac{\psi}{\psi_1} \right]^{-1}. \quad (26)$$

are obtained where

$$\psi = T_0 + B(T - T_0) - \frac{1}{Z}(M-1), \quad (27)$$

$$\psi_1 = T_0 + B(T_1 - T_0) - \frac{1}{Z}(M-1). \quad (28).$$

Finally, the formulas for the load characteristics of the thermopile are discussed.

ASSOCIATION: Tekhnologicheskii institut pishchevoy i kholodil'noy promyshlennosti, g. Odessa (Technological Institute of the Food and Refrigeration Industry, Odessa)

SUBMITTED: March 31, 1962  
Card 4/4

MARTYNOVSKIY, V.S., doktor tekhn.nauk, prof.; NAYER, V.A., kand.tekhn.nauk,  
dotsent; ROZHENTSEVA, S.A., inzh.

Thermoelectric cooling agents. Trudy OTIPiKhP 12:3-12 '62.  
(MIRA 17:1)

1. Kafedra kholodil'nykh mashin Odesskogo tekhnologicheskogo instituta  
pishchevoy i kholodil'noy promyshlennosti.

S/066/63/000/001/001/002

AUTHOR: Nayer, V. A., Candidate of Technical Sciences and Rozhentseva, S. A.,  
Engineer

TITLE: A semiconductor cooler for liquids

PERIODICAL: Kholodil'naya tekhnika, no. 1, 1963, 20-23

TEXT: A semiconductor cooler for liquids with a cooling capacity of 400 kcal/hr, with cooling from 25 to 10-12° was developed in the laboratoriya poluprovodnikov (Semiconductor Laboratory) of the Odesskiy tekhnologicheskii institut pishchevoy i kholodil'noy promyshlennosti (Odessa Technological Institute for the Food and Refrigeration Industry). The cooler has 2 batteries of thermal elements (20 x 20 x 3 mm) made of alloys of tellurium, bismuth, antimony, and selenium, with alloying admixtures. Their characteristic is  $\alpha = 2.1 \times 10^{-3} \text{ 1/}^\circ\text{K}$ . The thermal elements were filled with epoxy resin and connected in series by connecting plates (42 x 21 x 2 mm). Hot junctions were water cooled. Ribs were made of copper foil. Each plate with hot junctions had 16 ribs 3 mm high and 0.05 mm thick; plates with cold junctions had 9 ribs 9 mm high and 0.2 mm thick. Textolite partitions which formed the walls of channels for cooling water and the fluid to be cooled were placed between the connecting plates. The cross section of a channel was 60 mm<sup>2</sup> on the cold side and 140 mm<sup>2</sup> on

Card 1 of 2

A semiconductor cooler ....

S/066/63/000/001/001/002

the hot side. The weight of a thermal battery was about 5 kg, that of thermal elements 0.85 kg, and the connecting plates 1.4 kg. A model was tested with water at 23.4°, the cooled water flow was 18 and 15 kg/hr, the consumption of cooling water was 90 and 80 kg/hr. Power losses in the connecting plates should be taken into account when the current through them is more than 100 a, with calculated losses at 8.4% of the power supply. Losses due to contact electrical resistance were about 6-8%. In cooling 18 kg of water per hour, the maximum cooling capacity was obtained with a current of 300 a. Increased flow of cooling water increased the cooling capacity. Several industrial models of semiconductor coolers for liquids are under development. Two figures were given to show the structure of the cooler and one figure showed test results.

ASSOCIATION: Odessa Technological Institute of the Food and Refrigeration Industry

Card 2 of 2

MARTINOVSKIY, V. S.; MAYER, V. A.; ROZENTSEVA, S. A.

"Thermoelectric Refrigeration and Prospects for its Wide Scale Technical Application."

Report submitted for the 11th Intl. Congress of Refrigeration, Munich, Germany  
27 Aug - 4 Sept 1963.

NAYER, V.A.; ROZHENTSEVA, S.A.

Designing semiconductor thermopiles for refrigerators. Fiz.tver.  
tela 3 no.4:1125-1131 Ap '61. (MIRA 14:4)

1. Odesskiy tekhnologicheskii institut pishchevoy i kholodil'noy  
promyshlennosti.  
(Semiconductors) (Thermopiles)

PASHKOVSKIY, A.A.; ROZHETSKIN, A.M.; ZLOMANOV, V.A., spets.red.;  
TULINOV, N.N., red.; KUROCHKIN, V.D., red.; DANILOVA, Z.S.,  
red.-leksikograf; BUSNYUK, N.I., red.-leksikograf; ANIKINA,  
R.F., tekhn.red.

[Japanese-Russian military dictionary] Voennyi iaponsko-  
russkii slovar'. Okolo 20000 slov i slovosochetanii. S pri-  
lozheniem stat'i "Iaponskaia voennaa leksika" A.A.Pashkov-  
skogo. Moskva, Voen.izd-vo M-va obor.SSSR, 1959. 552 p.

(MIRA 13:1)

(Japanese Language--Dictionaries--Russian)

(Military art and science--Dictionaries)

ROZHEVETSKAYA, O.I.

Dermoid cyst of the ovary. Akush. i gin. 33 no.1:110-111

Ja-F '57

(MLRA 10:4)

1. Iz ginekologicheskogo otdeleniya (zav. O.I. Rozhevetskaya)  
Lebedinskoy gorodskoy bol'nitsy Sumskoy oblasti.

(OVARIES, neoplasms

teratoma) (Rus)

(TERATOMA, case reports

ovary) (Rus)



ROZHEVITS R. Yu.

Rozhevits, R. Yu. "New gramineous plants, v.," Botan. materialy Gerbariya Botan.  
In-ta im. Komarova Akad. nauk SSSR, Vol. XI, 1949, pp 18-31

SO: U-4934, 29 Oct 53, (Letopis 'Zhurnal 'nykh Statey, No. 16, 1949).

ROZHEVITS, R. YU

Grasses

Critical survey of the genus Piptatherum P. B. Bot. mat. Gerb., 14, 1951

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

ROZHENITS, R.YU.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

| <u>Name</u>      | <u>Title of Work</u>      | <u>Nominated by</u>      |
|------------------|---------------------------|--------------------------|
| Nikitina, Ye.V.  | "Flora of the Kirgiz SSR" | Kirgiz Affiliate of the  |
| Rozhenits, R.Yu  |                           | Academy of Sciences USSR |
| Kashchenko, L.I. |                           |                          |
| Protopopov, G.D. |                           |                          |
| Popova, L.I.     |                           |                          |
| Shishkin, B.K.   |                           |                          |
| Vvedenskiy, A.I. |                           |                          |

SO: W-30604, 7 July 1954

*Rozhevits, R.Yu.*

MARKOVSKAYA, L.A.; MINYAYEV, N.A.; MISHKIN, B.A.[deceased]; MISHKINA, A.Ya.;  
MURAV'YEVA, O.A.; NEKRASOVA, V.L.; ROZHEVITS, R.Yu.[deceased]; FLO-  
ROVSKAYA, Ye.F.; SHISHKIN, B.K.; YUZEPCHEK, S.V.; SHISHKIN, B.K., prof.,  
redaktor; DENISOV, N.N., redaktor; GATAULLINA, A.S., tekhnicheskiy  
redaktor.

[Flora of the Leningrad Province] Flora Leningradskoi oblasti. Otvet-  
stvennyi red. V.K.Shishkin. Leningrad. Izd-vo Leningradskogo univ.  
No.1. 1955. 285 p. (Microfilm) (MLRA 9:6)

1.Leningrad. Universitet. 2.Chlen-korrespondent Akademii nauk SSSR  
(for Shishkin). (Leningrad Province--Botany)

NIKITINA, Ye.V.; PROTOPOPOV, G.F.; ROZHEVITS, R.Yu. [deceased]; POPOVA, E.I., KASHCHENKO, L.I.; SMIRNOV, L.A.; TKACHENKO, V.I.; YAKUBOVA, P.A.; GOLOVKOVA, A.G.; AYDAROVA, P.A.; SHPOTA, Ye.I.; SHEVCHENKO, D.A.; SHISHKIN, Boris Konstantinovich, professor, doktor biologicheskikh nauk, nauchnyy redaktor; VVEDENSKIY, A.I., nauchnyy redaktor; YEVRUSHENKO, G.A., professor, otvetstvennyy redaktor; KOVALEV, V.N., otvetstvennyy redaktor; SEREBRYAKOV, V.I., tekhnicheskiiy redaktor

[The flora of Kirghizistan; classification of the plants of Kirghizistan] Flora Kirgizskoi SSR; opredelitel' rastenii Kirgizskoi SSR. Sost. E.V.Nikitina i dr. Frunze, Izd-vo Akademii nauk Kirgizskoi SSR. Vol.1. [Pteridophyta, Gymnosperms and Monocotyledons of the Angiosperms] Paprotnikoobraznye, golosemennye i odnodol'nye iz pokrytosemennykh. 1952. 103 p. Vol. 2. [Grasses and sedges] Zlaki i osokovy. 1950. 315 p. Vol.3. [Aroidae - Orchidaceae] Aroidnye - Orkhidnye. 1951. 148 p. Vol.4. [Salicaceae - Polygonaceae] Ivovye - Grechishnye. 1953. 153 p. Vol. 5. [Families: Chenopodiaceae, Amaranthaceae, Portulacaceae, Caryophyllaceae] Semeistva: Marevye, Amarantovye, Portulakovye, Gvozdichnye. 1955. 185 p. Vol. 6. [Families: Ceratophyllaceae, Ranunculaceae, Berberidaceae, Papaveraceae, Capparidaceae, Cruciferae] Semeistva: Rogolistnikovye, Liutikovye, Barberisovye, Makovye, Kapersovye, Krestotsavetnye. 1955. 297 p. (MIRA 9:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Shishkin)  
(Kirghizistan--Botany)

FEDOROV, S.A., doktor tekhn. nauk; RYCHKOV, A.I., inzh.; KRAYEV, Yu.K.,  
inzh.; ROZHENTSEV, N.P., inzh.

Using a flexible concrete stone ring lining. Shakht. stroi.  
9 no. 12:17-18 D '65. (MIRA 18:12)

1. Sverdlovskiy gornyy institut (for Fedorov, Rychkov, Krayev).
2. Trest Yegorshimugol' (for Rozhentsev).

ROZHENTSEV, Vadim Alekseyevich; TURKEL', Liber Grigor'yevich; SMIRNOV, A.G.,  
redaktor; PAVLOVA, M.M., tekhnicheskiiy redaktor

[The repair of agricultural machinery] Remont sel'skokhoziaistvennykh  
mashin, Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 263 p. (MLR 9:10)  
(Agricultural machinery--Repairing)

22048

24,7600(1035,1043,1037,1158)  
26.2181

S/181/61/003/004/014/030  
B102/B214

AUTHORS: Nayer, V. A. and Rozhentseva, S. A.

TITLE: Designing semiconductor thermopiles for refrigerators

PERIODICAL: Fizika tverdogo tela, v. 3, no. 4, 1961, 1125-1131

TEXT: The authors give a new method for calculating the thermal, energy, and temperature characteristics of semiconductor refrigerators. For the calculation of semiconductor thermopiles, formulas have been used so far, which are based on a consideration of the inner energy processes that come in play in a thermocouple. The cooling capacity  $Q_0(I)$  and the cooling coefficient  $\xi(I)$  are calculated on the assumption that the contact temperature of the thermocouples are independent of the current strength  $I$ ; they are functions having a maximum between the zero limits. Experimental studies of semiconductor refrigeration units showed, however, that the function  $\xi(I)$  has no extremum. An extremum will appear only if the contact temperature is artificially kept constant during the experiment. Since in usual practice a close relationship exists between the character-

Card 1/10



22048

S/181/61/003/004/014/030  
B102/B214

Designing semiconductor ...

istics of the refrigeration unit and the cooled object, it is not possible to limit oneself to a consideration of the inner energy processes. This appears from the fact that  $T_0$ ,  $T'$ , and  $(T-T_0)$  are non-vanishing functions of the current. Now, these facts are taken into consideration for the calculation of the characteristics of semiconductor thermopiles for a refrigeration unit. The following is the meaning of the symbols used:  $e_1$ ,  $e_2$  - coefficients of the thermo-emf of the thermocouple,  $^{\circ}\text{K}$ ;  $\rho_1$ ,  $\rho_2$  - the electrical resistivities,  $\text{ohm.cm}$ ;  $\lambda_1$ ,  $\lambda_2$  - coefficients of heat conduction,  $\text{w/cm}^{\circ}\text{K}$ ;  $S_1$ ,  $S_2$  - cross sections of the two sides of the thermocouple,  $\text{cm}^2$ ;  $l$  - length,  $\text{cm}$ ;  $T_0$  and  $T$  - temperature of the cold and the hot side, respectively,  $^{\circ}\text{K}$ ;  $T'_0$  and  $T'$  - temperature of the cooled object and the surrounding medium, respectively;  $\alpha_0$  and  $\alpha$  - heat transfer coefficients of the hot and the cold side of the thermocouple,  $\text{w/cm}^2.^{\circ}\text{K}$ ;  $kF$  - heat transmissivity of the container,  $\text{w}/^{\circ}\text{K}$ ; further,

Card 2/10

22048

S/181/61/003/004/014/030  
B102/B214

Designing semiconductor ...

$$e = e_1 + e_2; \quad \rho = \left[ \rho_1 \left( 1 + \frac{1}{m} \right) + \rho_2 (1 + m) \right], \quad S = S_1 + S_2;$$

$\lambda = \left[ \frac{\lambda_1}{1 + \frac{1}{m}} + \frac{\lambda_2}{1 + m} \right], \quad m = S_1/S_2$  (see also Fig. 2). The quantity of heat  $Q_0$  taken from the cold side and the quantity ( $Q$ ) released on the hot side are given by:

$$Q_0 = eT_0I - \frac{1}{2}I^2\rho\frac{l}{S} - \lambda\frac{S}{l}(T - T_0), \quad (7)$$

$$Q = eTI + \frac{1}{2}I^2\rho\frac{l}{S} - \lambda\frac{S}{l}(T - T_0). \quad (8)$$

The contact temperatures are  $T_0 = T'_0 - Q_0/\alpha_0 S$ , and  $T = T' + Q/\alpha S$ ; the temperature inside the cooled object is  $T'_0 = T' - Q_0/kF$ . Then, on eliminating  $T$ ,  $T_0$ , and  $T'_0$ , one obtains:

Card 3/10

22048

S/181/61/003/004/014/030  
B102/B214

Designing semiconductor ...

$$Q_0 = \frac{Q'_0(1 - al + b) - Q'b}{(1 - al + b)(1 + cl + b) - bd}, \quad (12) \quad (12)$$

$$Q = \frac{Q'(1 + cl + d) - Q'_0d}{(1 + cl + d)(1 - al + b) - bd}, \quad (13) \quad (13)$$

with

$$Q'_0 = eT'I - \frac{1}{2}I^2p \frac{l}{S}, \quad (14) \quad (14)$$

$$Q' = eT'I + \frac{1}{2}I^2p \frac{l}{S}, \quad (15) \quad (15).$$

$$a = \frac{e}{aS}, \quad b = \frac{\lambda}{al},$$

$$c = e\left(\frac{1}{a_0S} + \frac{1}{kF}\right); \quad d = \frac{\lambda}{l}\left(\frac{1}{a_0} + \frac{S}{kF}\right).$$

Card 4/10

Designing semiconductor ...

22048  
S/181/61/003/004/014/030  
B102/B214

The cooling coefficient is given by

$$\begin{aligned} \frac{1}{\delta} &= \frac{Q}{Q_0} - 1, \\ \frac{1}{\delta} &= \frac{(\delta' + 1)(1 + cl + d)}{\delta'(1 - al - b)} - 1. \end{aligned} \quad (16) \quad (16).$$

$$\delta' = \frac{Q_0}{Q' - Q_0}.$$

(12), (13), and (16) serve for the construction of thermal and energy characteristics. Simplified relations which suffice in most cases are obtained with  $\alpha = \infty$ , and  $u_0 = \infty$  (i.e.,  $T_0 = T'_0$ , and  $T = T'$ ):

$$Q_0 = \frac{\frac{eTl}{2} - \frac{1}{2}I^2\frac{l}{S}}{1 + \frac{el}{kF} + \frac{\lambda}{kF}}, \quad (17) \quad (17)$$

Card 5/10